

## **BOC 101 - Building Systems Overview: Course Outline**

1. Introduction to the BOC program and local sponsors
  - a. Role of building operators
  - b. Benefits of certification
  - c. Approach and expectations
2. Energy and Resources
  - a. What's a resource?
  - b. Some energy basics
3. Preventive Maintenance and Energy Basics
  - a. Types of Maintenance
  - b. Energy and resources
  - c. Energy terminology
  - d. Building heat loss and gain
  - e. Comfort factors, humidity, air temperature and air movement
4. Heating Systems
  - a. Boilers
    - i. Boiler types
    - ii. Steam and condensate cycle
    - iii. Blowdown, water treatment, tune-ups and maintenance requirements
    - iv. Boiler operation improvements
  - b. Central furnace
    - i. Fuel types
    - ii. Cabinet components & rooftop units
    - iii. Motors
    - iv. Maintenance
5. Cooling, Ventilation & Control Systems
  - a. Cooling load rules of thumb
  - b. Vapor compression cycle
  - c. Types
    - i. Heat pumps
    - ii. Chillers
6. Air Handling Systems
  - a. Purpose
  - b. Equipment
  - c. Design options you may see
7. Lighting Systems
  - a. Types
  - b. Maintenance issues
8. Facility Electrical Systems
  - a. Terms
  - b. Safety basics
  - c. Utility electrical distribution
9. Indoor Air Quality
  - a. Investigation fundamentals
  - b. Building occupant relations
10. Pulling It All Together
  - a. Review facility and identify systems
  - b. Locate or send for documentation
  - c. Identify maintenance issues